EXPANDED PRE-CERCLIS SCREENING
SIXTY MINUTE CLEANERS
ROCK HILL, SOUTH CAROLINA
YORK COUNTY
SCS# 123 457 884

Prepared for:

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 4
61 Forsyth Street
Atlanta, Georgia 30303

Prepared by:

South Carolina Department of Health and Environmental and Control (SCDHEC)
Division of Site Assessment and Remediation
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TABLE OF CONTENTS

1.0 INTRODUCTION

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), the Site Assessment Section, South Carolina Department of Health & Environmental Control (DHEC) conducted an Expanded Pre-CERCLIS Screening (ePCS) at the Sixty Minute Cleaners site in York County, South Carolina. The information gathered from this investigation will be used to decide if the site will be placed on CERCLIS or managed by some other means.

2.0 LOCATION

The site is located at 1150 Cherry Rd. Rock Hill, SC (Reference #1). The site is situated on the south side of Cherry Road approximately 2.35 miles southwest of the intersection of Cherry Road and I-77 (Reference #2) (Figure 1,2). Geographic coordinates for the site are 34.950911 North, -81.017953 West (Reference #3) (Appendix C).

3.0 OWNERSHIP

Tax Map ID #6311406004 (Reference #1)

Prior to 1995	Unknown
1995 – 2011	Patsy W. Freeman (Reference #4)
2011 – present	Dent Out, LLC. (Reference #5)

Mailing Address of Current Property Owner

Hunt Irwin
Dent Out, LLC
1774 Herndon Farm Rd.
Rock Hill, SC 29732
(Reference #6)

4.0 SITE HISTORY and DESCRIPTION

The former Sixty Minute Cleaners began operation in 1963 and used tetrachloroethene (PCE) as a solvent until 1997. The site is located in a mixed residential and commercial portion of York County. The standalone building is currently occupied by a business that repairs and installs auto glass. To the north of the facility building is Cherry Road followed by standalone businesses including a Carpet and Rug Superstore, Bank of America Financial Center and You Select Auto Sales. Carolina Best Title Loans is located to the east. Private residences are located to the south, and Cindy's Flower shop is located to the west (Figure 2) (Reference #7).

The former Sixty Minute Cleaners facility was part of SCDHEC's Drycleaning Facility Restoration Trust Fund (DFRTF) until it was deemed ineligible for the program in May 2016 due to non-payment of fees (Reference #8). Shortly thereafter, the project was transferred to SCDHEC's Federal and State Site Assessment section (Reference #9).

Past Site Investigations

On December 9, 2008, Ecology & Environment (E&E) conducted an Expanded Initial Assessment (EIA) at the Sixty Minute Cleaners Facility. Three shallow groundwater grab samples were collected using direct push techniques at locations surrounding the drycleaner facility. Chlorinated solvents were present in DP01, DP02, and DP03 at levels exceeding the Maximum Contaminant Level (MCL) for PCE at 78 µg/L, 3100 µg/L, and 58,000 µg/L respectively. In addition, PCE was detected in a nearby stream at levels below the MCL.

Based on data collected during the EIA, further assessment of the drycleaning facility was deemed necessary. The data collected from the additional assessment is discussed in detail in the pathway evaluation below.

5.0 PATHWAY EVALUATION

5.1 GROUNDWATER MIGRATION PATHWAY

To define the lateral and vertical extent of dissolved drycleaning related groundwater contamination beneath the site and adjacent areas, a total of 31 direct push groundwater vertical profile borings were completed with a total of 97 groundwater samples collected at the site between January 13 and 24, 2014. Groundwater profiling depths ranged from 10 to 45 ft. below ground surface (bgs). Table 1 below summarizes the data from those sampling events. Figure 3 depicts the location of the approximate groundwater plume modeled from the data.

Table 1
Groundwater Sampling Summary Analyical Results
Sixty Minutes Cleaners
SCDHEC #52665
Rock Hill, York County, South Carolina
1/18/14 & 1/24/2104

Sample Number	Depth Interval (Feet BGS)	CT Reading	Estimated Total CVOCs	PCE	TCE	Cis-1,2-DCE	Trans-1,2-DCE	1,1 DCE	Vinyl Chloride
Groundwater Profile Samples (µg/L)									
SC MCLs (R.61-58)				**5**	**5**	**70**	**100**	**7**	**2**
DP01	11-15	70	15,000	**22000**	**1400**	**22000**	**140**	**45**	**2300**
	16-20	65	10,000	**18000**	**940**	**11000**	47	--	**1100**
	21-25	70	15000	**68000**	**1000**	**8600**	**270**	--	**490**
	25-29	60	10,000	**46000**	**810**	**6900**	36	--	**360**
DP02	11-15	9	1,000	**200**	2.5	15	--	--	1.4
	16-20	10	1,000	**190**	4.1	34	--	--	
	21-25	3	250	**84**	1.2	7.4	0.32	--	0.79
	26-28	1.5	100	**50**	0.44	3.1	--	--	--
DP03	11-15	3	250	**180**	**13**	26	0.28	--	0.98
	16-20	10	1,000	**340**	4.8	14	--	--	--
	21-25	12	1,300	**890**	--	--	--	--	--
	26-30	1	70	**34**	0.44	2.3	--	--	--
DP04	11-15	60	10,000	**35000**	**2700**	**7900**	52	**58**	**1100**
	16-20	65	10,000	**18000**	**750**	**740**	--	--	**62**
DP05	11-15	0.5	35	**11**	0.4	0.94	--	--	--

	16-20	9	1,000	**480**	**20**	28	--	--	--
	21-25	9	1,000	**70**	4	4.8	--	--	0.6
	26-30	7.5	500	**160**	1.4	--	--	--	--
	31-35	0	0	1.3	--	--	--	--	--
	36-40	0	0	0.38	--	--	--	--	--
DP06	11-15	35	5,000	**7000**	**740**	**2200**	18	**8**	--
	21-25	20	2,500	**9.2**	**1800**	**9800**	10	**390**	**110**
	31-35	30	4,000	**12000**	**480**	**3000**	16	**12**	**300**
	41-45	25	3,000	**5600**	**210**	**1800**	5.2	3.9	**100**
DP07	11-15	NS	NS	NA	NA	NA	NA	NA	NA
	16-20	NS	NS	NA	NA	NA	NA	NA	NA
	10-20	0.1	5	3.7	--	--	--	--	--
	21-25	NS	NS	NA	NA	NA	NA	NA	NA
	26-30	0	0	4.2	--	0.39	--	--	--
	41-45	0	0	NA	NA	NA	NA	NA	NA
DP08	11-15	0.2	15	**18**	--	0.96	--	--	--
	16-20	0.2	15	**21**	--	1.1	--	--	--
	21-25	0	0	NA	NA	NA	NA	NA	NA
DP09	11-15	5	400	**200**	**9.9**	14	--	--	--
	16-20	30	4,000	**740**	**18**	65	--	--	--
	21-25	25	3,000	**1400**	**21**	**110**	--	--	--
	27-31	40	7,000	**310**	**2800**	40	--	--	--
DP10	11-15	1.6	120	**200**	**39**	**94**	1.2	0.7	0.38
	16-20	40	7,000	**2800**	**49**	**230**	8.6	--	--
	21-25	20	2,500	**2500**	**40**	**160**	18	--	--
DP11	11-15	0.5	35	**7.3**	--	0.82	--	--	--
	16-20	0.5	35	**7.5**	--	0.52	--	--	--
	21-25	1	70	**13**	0.64	2	--	--	--
	31-35	0.1	7	4.7	--	0.9	--	--	--
	40-44	0	0	1.3	--	--	--	--	--
DP12	11-15	0.2	15	**8**		0.38	--	--	--
	16-20	0	0	NA	NA	NA	NA	NA	NA
DP13	11-15	0.1	7	**13**	0.82	5.6	--	--	--
	16-20	0.1	7	**6.8**	--	0.74	--	--	--
	21-25	0	0	NA	NA	NA	NA	NA	NA
DP14	8-13	1	70	**24**	1.8	5.2	--	--	--
DP15	11-15	25	3,000	**1600**	**27**	**160**	--	--	--
	16-20	20	2,500	**1300**	**20**	**120**	--	--	--
DP16	11-15	6	450	**120**	**10**	30	1.8	--	--
	16-20	7.5	600	**170**	4.8	21	--	--	--
	21-25	2	150	**110**	**5.5**	22	0.62	--	--
	31-35	9	1,200	**170**	4	17	0.61	--	--
	40-44	3	275	**190**	3.1	16	0.64	--	--
DP17	11-15	0	0	--	--	--	--	--	--
	16-20	0	0	NA	NA	NA	NA	NA	NA
	29-33	0	0	NA	NA	NA	NA	NA	NA
DP18	11-15	0.2	15	**9.2**	0.44	0.98	--	--	--
	16-20	0.5	35	**59**	1.2	2.8	--	--	--
	21-25	0.2	15	**15**	0.58	0.94	--	--	--
	31-35	0	0	2	--	--	--	--	--

DP19	11-15	2	150	**57**	1	1.3	--	--	--
	16-20	1.5	120	**86**	1	1.5	--	--	--
	21-25	6	450	**120**	1.3	3.4	--	--	--
DP20	11-15	15	2,000	**350**	4.2	15	--	--	--
	16-20	1.1	80	**5.9**	--	0.9	--	--	--
	21-25	0.1	7	3.2	--	--	--	--	--
DP21	6-10	0.1	7	2.3	0.46	--	--	--	--
	11-15	0.1	7	4.2	--	--	--	--	--
DP22	5-9	0	0	3.6	--	--	--	--	--
DP23	11-15	0	0	NA	NA	NA	NA	NA	NA
	16-20	0	0	0.84	--	--	--	--	--
	21-25	0	0	NA	NA	NA	NA	NA	NA
	31-35	0	0	NA	NA	NA	NA	NA	NA
DP24	11-15	0	0	NA	NA	NA	NA	NA	NA
	16-20	0	0	1.2	--	--	--	--	--
	21-25	0	0	NA	NA	NA	NA	NA	NA
DP25	11-15	0	0	--	--	--	--	--	--
DP26	11-15	0	0	NA	NA	NA	NA	NA	NA
	16-20	0	0	--	--	--	--	--	--
	26-30	0	0	NA	NA	NA	NA	NA	NA
DP27	11-15	0	0	--	--	--	--	--	--
	16-20	0	0	NA	NA	NA	NA	NA	NA
DP28	11-15	0	0	0.36	--	--	--	--	--
	16-20	0	0	NA	NA	NA	NA	NA	NA
	26-30	0	0	NA	NA	NA	NA	NA	NA
DP29	11-15	0	0	1.3	--	--	--	--	--
	16-20	0	0	NA	NA	NA	NA	NA	NA
DP30	6-10	0	0	NA	NA	NA	NA	NA	NA
	11-15	0.1	5	2	--	--	--	--	--
	16-20	0.1	5	**6.8**	--	--	--	--	--
DP31	9-13	0	0	--	--	--	--	--	--
	14-18	0	0	NA	NA	NA	NA	NA	NA

Note: Value in **bold** indicates the detected concentration exceeds an applicable regulatory level.

Key:

-- = Compound was analyzed for, but was not detected.
µg/L = Micrograms per liter.
BGS = Below ground surface.
CTUs = Color-Tec units.
DCE = Dichloroethene.
NA = Not analyzed.
N/A = Not applicable.
NE = Not established.
PCE = Tetrachloroethene.
SC MCLs = South Carolina Maximum Contaminant Levels for Drinking Water (R.61-58).
TCE = Trichloroethene.
CVOHs = Chlorinated volatile organic halogens

(Reference #7)

PCE was detected in one or more groundwater samples collected at 19 groundwater profiling locations at concentrations (5.9 to 68,000 µg/L) exceeding the 5µg/L MCL for PCE. The highest PCE concentration (68,000 µg/L) was detected in the range from 21 to 25 ft bgs and was

collected at a profile location in the paved area near the northeast corner of the drycleaning facility building.

Based on Figure 3, the groundwater plume, as currently identified, extends approximately 1,300 ft. north-northwest from the site and is approximately 350 ft. wide. However, the full horizontal extent of the plume has not been identified. Two profile locations (DP18 and DP19) near the northeast corner of the plume show MCL exceedances extending to depths between 11 and 25 ft bgs (Figure 4). There are no additional profile locations beyond this edge of the plume heading in a northeast direction.

There is also large area within the plume between the northern side of Cherry Road and the northeastern edge of the Bank of America complex where no groundwater profiles were collected. DP06 is located on the southern edge of this area. DP08, DP09, and DP10 are located at the northern edge of this area (Figure 4). All of these profile locations show PCE in groundwater exceeding MCLs (Reference #12).

There are approximately six private water drinking wells within a one mile radius of the site. One of the wells is located east of the site. Five of the wells are located northwest of the site (Reference #14). None of the private wells are in the north-northeastern path of the groundwater plume associated with the former Sixty Minute Cleaners site.

There are no public water supply wells within a one-mile radius of the site (Reference #10).

5.2 SURFACE WATER MIGRATION PATHWAY

An unnamed intermittent stream originates approximately 0.1 miles to the west of the site. The stream flows to the north-northwest for approximately 0.75 miles before emptying into a bottomland drainage basin north of the site. The drainage basin is adjacent to a shipping and logistics company (Figure 7). The intermittent stream terminates in the drainage basin and has no visible connection to any perennial surface water bodies in the area.

Seven surface water samples including a pore water sample were collected as part of the January 2014 field investigation. Figure 3 depicts the location of those samples and the table below summarizes the results.

Table 2
Surface Water Sampling Summary Analytical Results
Sixty Minutes Cleaners
SCDHEC #52665
Rock Hill, York County, South Carolina
1/18/14 & 1/24/2104

Sample Location	Depth Interval (feet BGS)	Color-Tec Readings (CTUs)	Parameter/Concentration					
			PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	1,1 DCE	Vinyl Chloride
Surface Water Sample Results (µg/L)								
SC Stds (Consumption of organisms only, R.61-68)			3.3	30	NE	10000	7100	2.4
SW01	N/A	0	--	--	--	--	--	--
SW02	N/A	1	**47**	1.5	5.6	--	--	--
SW03	N/A	0.5	**17**	0.87	4.2	--	--	--
SW04	N/A	0	--	--	--	--	--	--
SW05	N/A	0.1	**5.6**	0.37	1.5	--	--	--

SW06	N/A	15	**680**	16	56	--	--	--
SW07	N/A	0	NA	NA	NA	NA	NA	NA
Sediment Pore Water (µg/L)								
PW01	4"	9	**170**	7.1	24	0.4	--	--

Note: Value in **bold** indicates the detected concentration exceeds an applicable regulatory level.

Key:
-- = Compound was analyzed for, but was not detected.
µg/L = Micrograms per liter.
BGS = Below ground surface.
CTUs = Color-Tec units.
DCE = Dichloroethene.
NA = Not analyzed.
N/A = Not applicable.
NE = Not established.
PCE = Tetrachloroethene.
SC Stds = South Carolina Standards for Surface Water (R.61-68).
TCE = Trichloroethene.
CVOHs = Chlorinated volatile organic halogens

(Reference #7)

PCE was detected above its respective MCL of 5 ppb in four of the surface water samples and the pore water sample that was collected. The chlorinated solvent breakdown products TCE and cis-1,2-DCE were also present in those same samples but at levels below their respective MCLs (Reference #12).

The farthest downstream sample collected during the January 2014 field investigation was SW06. This sample slightly exceeded its respective MCL of 5 ppb.

5.3 SOIL EXPOSURE / AIR PATHWAYS

The site is located in Rock Hill, SC southwest of I-77 on Cherry Rd (Figure 1). On-site soil is classified as the Urban land Brewback complex which consists of a somewhat poorly-drained soil with a typical profile of:

0 – 4 in	Fine sandy loam
4 – 10 in	Sandy clay loam
10 – 30 in	Clay
30 – 36 in	Clay
36 – 80 in	Weathered bedrock

(Reference #10)

The stand-alone building on the property is currently being used as an auto glass repair and installation shop.

There are four schools within a one-mile radius of the site and there are no daycares within a one-mile radius (Reference #2). The site is capped with asphalt, so direct contact with any potentially contaminated soils associated with the site is unlikely.

As part of the January 2014 field investigation, six soil borings were conducted and 18 soil samples were collected and screened for chlorinated solvents using the Color-Tec screening method (Reference #11). Splits of two soil samples (SB01-2 and SB06-4) were also analyzed for

VOCs using USEPA method 8260B. Figure 8 depicts the location of those samples and Table 3 below summarizes the results.

Table 3
Soil Sample Summary Analytical Results
Sixty Minute Cleaners
SCDHEC #52665
Rock Hill, York County, South Carolina
1/18/14 & 1/24/2014

Profile Location	Depth Interval (feet BGS)	Color-Tec Reading (CTUs)	Estimated Total CVOHs	Parameter/Concentration				
				PCE	TCE	cis-1,2-DCE	1,1 DCE	Vinyl Chloride
Soil Sample Results (µg/kg)								
USEPA RSL (Residential Direct Exposure)				**8,100**	**410**	**16,000**	**23,000**	**59**
USEPA RSL (Industrial Direct Exposure)				**39,000**	**1,900**	**230,000**	**100,000**	**1,700**
USEPA RSL (Soil to Groundwater SSL)				**2.3**	**1.8**	**21**	**2.5**	**0.69**
SB01	2	30	25,000	**29300**	**1530**	**7490**	--	**813**
	4	5	400	NA	NA	NA	NA	NA
	6	10	900	NA	NA	NA	NA	NA
	8	5	380	NA	NA	NA	NA	NA
SB02	2	0	0	NA	NA	NA	NA	NA
	4	0	0	NA	NA	NA	NA	NA
	6	0	0	NA	NA	NA	NA	NA
	8	0	0	NA	NA	NA	NA	NA
SB03	2	0	0	NA	NA	NA	NA	NA
	4	0	0	NA	NA	NA	NA	NA
	6	0	0	NA	NA	NA	NA	NA
	8	0.2	15	NA	NA	NA	NA	NA
SB04	2	0	0	NA	NA	NA	NA	NA
	4	0	0	NA	NA	NA	NA	NA
SB05	2	0	0	NA	NA	NA	NA	NA
	4	0	0	NA	NA	NA	NA	NA
SB06	2	0	0	NA	NA	NA	NA	NA
	4	0	0	--	--	6.09	--	**9.05**

Notes: Value in **bold** indicates the detected concentration exceeds one or more applicable RSLs.

Key:
-- = Analyte not present above laboratory detection limit.
µg/kg = Micrograms per kilogram.
BGS = Below ground surface.
CTUs = Color-Tec Units.
DCE = Dichloroethene.
NA = Not analyzed.
PCE = Tetrachloroethene.
PRG = Preliminary Remediation Goals (currently known as RSL)
RSL = USEPA Regional Screening Level (Non mandatory, risk-based soil guidance which combines the Region 9 PRGs with similar Region 3 and Region 6 screening levels)

SSL = Soil Screening Level for migration of contaminants from soil to groundwater based on groundwater MCL.
TCE = Trichloroethene.
USEPA = United States Environmental Protection Agency.
CVOHs= Chlorinated volatile organic halogens

As shown in Table 1, all samples collected at soil boring location SB01 as well as soil sample SB03-8 exhibited positive Color-Tec CVOH screening values ranging from 0.2 to 30 Color-Tec Units (CTUs). PCE was detected in soil boring SB01-2 at a laboratory concentration of 29,300 µg/kg, exceeding the USEPA soil screening level (SSL) of 2.3 µg/kg for leachability to groundwater and the residential direct exposure level of 8,100 µg/kg for PCE. In addition, TCE was detected in SB01-2 at a laboratory concentration of 1,530 µg/kg, exceeding the USEPA SSL of 1.8 µg/kg for leachability to groundwater and residential direct exposure level of 410 µg/kg for TCE. Furthermore, cis-1,2-DCE was detected in soil sample SB01-2 at a laboratory concentration of 7,490 µg/kg, exceeding the USEPA SSL of 21 µg/kg for leachability to groundwater for cis-1,2-DCE. Trans-1,2-DCE was also detected in soil sample SB01-2 at a laboratory concentration of 33 µg/kg, exceeding the USEPA SSL for leachability to groundwater of 29 µg/kg for trans-1,2-DCE. Finally, vinyl chloride was detected in soil sample SB01-2 at a laboratory concentration of 813 µg/kg, exceeding the USEPA SSL of 0.69 µg/kg and residential direct exposure level of 59 µg/kg for vinyl chloride (Reference #7, Reference #12).

Soil sample SB06-4 contained cis-1,2-DCE at a laboratory concentration of 6.09 µg/kg, below the USEPA Region 9 SSL of 21 µg/kg for cis-1,2-DCE. In addition, SB06-4 contained vinyl chloride at a laboratory concentration of 9.05 µg/kg, exceeding the USEPA SSL of 0.69 µg/kg for vinyl chloride (Reference #7) (Reference #12).

Based on the soil sample Color-Tec CVOH screening results and laboratory analytical results, drycleaning-related soil contamination at levels exceeding USEPA screening values are present on the Sixty Minute Cleaners facility adjacent to the building to a depth of at least 2 feet BGS and likely extends to a depth of at least four feet BGS (Reference #7). However, the extent of the soil contamination appears to be limited in scope and confined to the Sixty Minute Cleaners property.

Subsurface Vapor Intrusion Evaluation

Between January 14th and 16th, 2014 six direct push groundwater samples (DP06, DP07, DP08, DP09, DP10, and DP11) were collected from the Bank of America Financial Center property approximately 280 feet north of the 60 Minute Cleaners facility. PCE was detected in groundwater samples DP06 (12,000 µg/L), DP09 (1,400 µg/L), and DP10 (2,800 µg/L) at concentrations exceeding the Target Sub-slab Groundwater Concentration Level of 65 µg/L for PCE. In response, two soil-gas samples (SG1 and SG2) were collected from outside the Bank of America building and one sample (SG3) was collected from just beneath the foundation slab inside the building to evaluate the potential for vapor intrusion. To collect soil gas samples SG3 and SG1, a hand-held electric hammer drill equipped with a ½ inch diameter masonry bit was used to penetrate the surface, followed by insertion of a hand-held, ¼ inch diameter, stainless steel soil gas probe to access the natural soil just below the surface. A three way diverter valve and polyethylene tubing was used to connect the soil gas probe, a 60cc syringe, and a summa canister. The diverter valve was turned to allow purging of air from the system using the 60cc syringe and then turned to connect the soil probe and the summa canister to collect the sample. The summa canister sample was analyzed for EPA Method TO-15 by ALS Environmental Laboratories. Soil gas sample SG2 did not require the use of the hammer drill.

Figure 9 illustrates the location of the soil gas samples collected and Table 4 below summarizes the results.

Table 4
Soil Gas Summary Analytical Results
Sixty Minute Cleaners
SCDHEC #52665
Rock Hill, York County, South Carolina
September 23, 2014

Profile Location	Date	Parameter/Concentration					
		PCE	TCE	cis-1,2-DCE	Trans-1,2,-DCE	1,1 DCE	Vinyl Chloride
Soil Gas Sampling Results (µg/m3)							
Target Sub slab and Exterior Soil Gas Concentration (µg/m3)[1,2]		470	30	NE	NE	NE	28
SG1*	9/23/14	ND	ND	ND	ND	ND	ND
SG2	9/23/14	14	ND	ND	ND	ND	ND
SG3	9/23/14	9.9	ND	ND	ND	ND	ND

Notes:
[1] USEPA OSWER Target Sub Slab Soil Gas VISL for Non-Residential Structures (µg/m^3)
[2] There are no established VISLs for Cis 1,2-DCE, Trans 1,2-DCE
* The Summa Canister appeared have no vaccuum, it is likely no gas entered the can

Key:
NE = Not Established (There are no established VISLs for Cis 1,2-DCE , 1,1-DCE, or Trans 1,2-DCE)
ND = Not Detected
µg/m^3 = Micrograms per cubic meter.
OSWER = Office of Solid Waste and Emergency Response
VISL = Vapor Intrusion Screening Level
PCE = Tetrachloroethene
TCE = Trichloroethene
DCE = Dichloroethene

PCE was detected in soil gas sample SG2 and SG3 at laboratory concentrations of 14 micrograms per cubic meter (µg/m3) and 9.9 µg/m3, below the Target Sub-slab and Exterior Soil Gas Level of 470 µg/m3 for PCE (Reference #13). No chlorinated compounds were detected in soil gas sample SG1, however it should be noted that when the sample was collected the summa canister appeared to have no vacuum and may not effectively represent soil gas concentrations at that location. Based on the exterior and sub-slab soil gas sampling results, the risk of long term chronic exposure to dry-cleaning related compounds via the vapor intrusion pathway at the Bank of America is low (Reference #7). However, based on data from the January 2014 field investigation, no soil gas samples were collected in or around the Sixty Minute Cleaners building. In addition, there are several other structures situated within the footprint of the groundwater plume that may need to be evaluated for potential vapor intrusion contamination as well.

6.0 SUMMARY AND CONCLUSIONS

The former Sixty Minute Cleaners began operation in 1963 and used PCE as a solvent until 1997. The site is located in a mixed residential and commercial portion of York County. The standalone building is currently occupied by a business that repairs and installs auto glass. To the north of the facility building is Cherry Road followed by standalone businesses including a Carpet and Rug Superstore, Bank of America Financial Center and You Select Auto Sales. Carolina Best Title Loans is located to the east. Private residences are located to the south, and Cindy's Flower shop is located to the west.

The former Sixty Minute Cleaners facility was part of SCDHEC's Drycleaning Facility Restoration Trust Fund (DFRTF) until it was deemed ineligible for the program in May 2016 due to non-payment of fees. Shortly thereafter, the project was transferred to SCDHEC's Federal and State Site Assessment section (Reference #9).

Previous investigations conducted in December 2008 and January 2014 have shown the presence of a chlorinated solvent groundwater plume exceeding applicable MCLs originating at the property and extending offsite towards the north-northwest. The horizontal extent of the groundwater plume has not been fully delineated.

Chlorinated solvent contamination exceeding MCLs has also impacted the surface water pathway in a nearby intermittent stream. The farthest downstream sample collected in a previous field investigation exceeds MCLs. Potential contamination in the surface water pathway needs to be fully delineated.

Soil gas samples collected within the vapor intrusion pathway demonstrated the presence of chlorinated solvent contamination at the nearby Bank of America building. Data collected showed that soil gas values were below applicable Vapor Intrusion Screening Levels (VISLs), but one of the samples collected was inconclusive because it had no vacuum during sample collection. In addition, based on data from the January 2014 field investigation, no soil gas samples were collected in or around the 60 Minute Cleaners building and there are several other structures situated within the footprint of the groundwater plume that may need to be evaluated for potential vapor intrusion contamination as well. The full extent of potential vapor intrusion contamination has not been delineated.

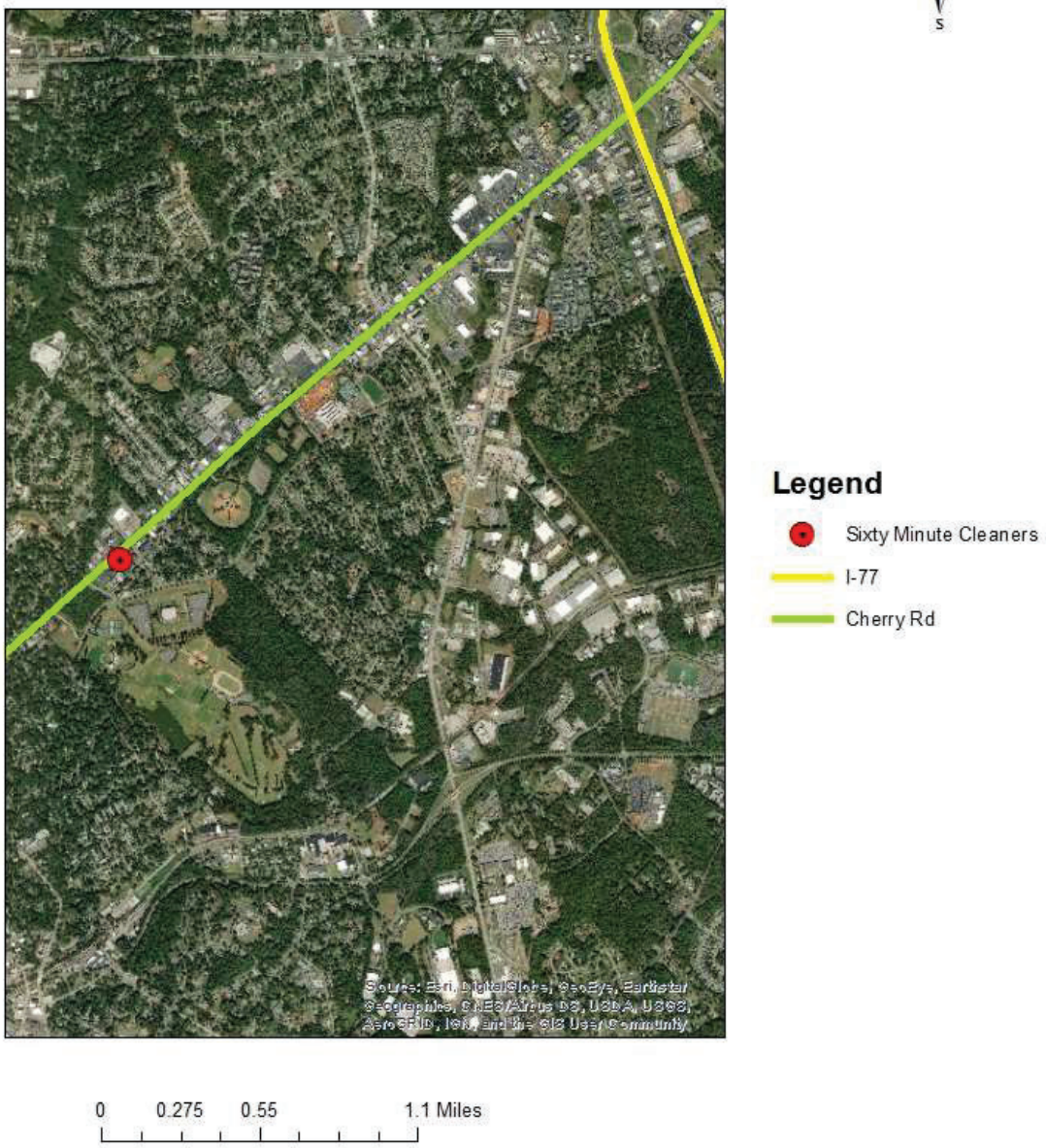
Due to the presence of contamination at the property in the soil and groundwater pathways and extending off-site into the groundwater, surface water, air and soil pathways, the 60 Minute Cleaners site is recommended for placement on CERCLIS. Additional groundwater samples will be collected through the installation of temporary direct push monitoring wells. These samples will be analyzed for Volatile Organic Analytes (VOAs) in an effort to fully delineate the groundwater plume. Additional sediment and surface water samples will be collected in the nearby intermittent stream. These samples will be analyzed for VOAs in an effort to determine potential impact to the surface water pathway. Soil gas samples will be collected in several areas located within the groundwater plume including from beneath the former 60 Minute Cleaners building, the Bank of America building, Cindy's Flower Shop, the Carolina's Best Title Loan building, and the strip mall located to the northwest of the Bank of America building. These samples will be analyzed for VOAs, and data will be compared to USEPA OSWER Target Sub Slab Gas Vapor Intrusion Screening Levels for non-residential structures. Using that information, the potential need for any additional indoor air samples within the chlorinated solvent plume will be evaluated.

7.0 REFERENCES

1. Memo to File. Bergstrand to BLWM File #52665. BLWM Bureau File Management System. File #52665, document 22. Available at SCDHEC.
2. Google Earth. Last accessed January 2019.
3. www.latlong.net Last accessed January 2019
4. Drycleaning Facility Registration Application. BLWM Bureau File Management System. File #52665, document 1. Available at SCDHEC.
5. https://maps.yorkcountygov.com/gvh5/index.html?viewer=planning Last accessed October 2018.
6. Drycleaning Restoration Trust Fund Ineligible Status Letter, Bergstrand to Irwin, dated May 17, 2016. BLWM Bureau File Management System. File #52665, document 25. Available at SCDHEC.
7. Data Report for Soil Sampling, Groundwater Profiling, Monitoring Well Sampling, Surace Water Sampling, and Vapor Intrusion Sampling for 60 Minute Cleaners, Rock Hill, York County, South Carolina (SCDHEC Project No. 52665) dated, July 29, 2016. Submitted to SCDHEC by Ecology & Environment. BLWM Bureau File Management System. File #52665, document 27. Available at SCDHEC.
8. Correspondence Bergstrand to Irwin, dated May 17, 2016. BLWM Bureau File Management System. File #52665, document 25. Available at SCDHEC.
9. Correspondence Bergstrand to McInnis, dated June 27, 2016. BLWM Bureau File Management System. File #52665, document 26. Available at SCDHEC.
10. SoilWeb: An Online Soil Survey Browser. http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed in April 2019
11. www.aqrcolortec.com. Last accessed April 2019.
12. https://semspub.epa.gov/work/HQ/197414.pdf
13. https://www.epa.gov/vaporintrusion/vapor-intrusion-screening-level-calculator
14. SCDHEC Intranet Citrix Server
    http://coitsxa-wiv01.dhec.sc.gov/Citrix/XenApp/site/default.aspx
    Subfolder:
    M:\gisapp\EQCAPP\BLWM\BLWMapp\Drycleaning\DrycleaningCDProject\DrycleaningGPSUpdate
15. SCDHEC, GIS Citrix Server. 2006 Aerial Photographs. Available at SCDHEC.

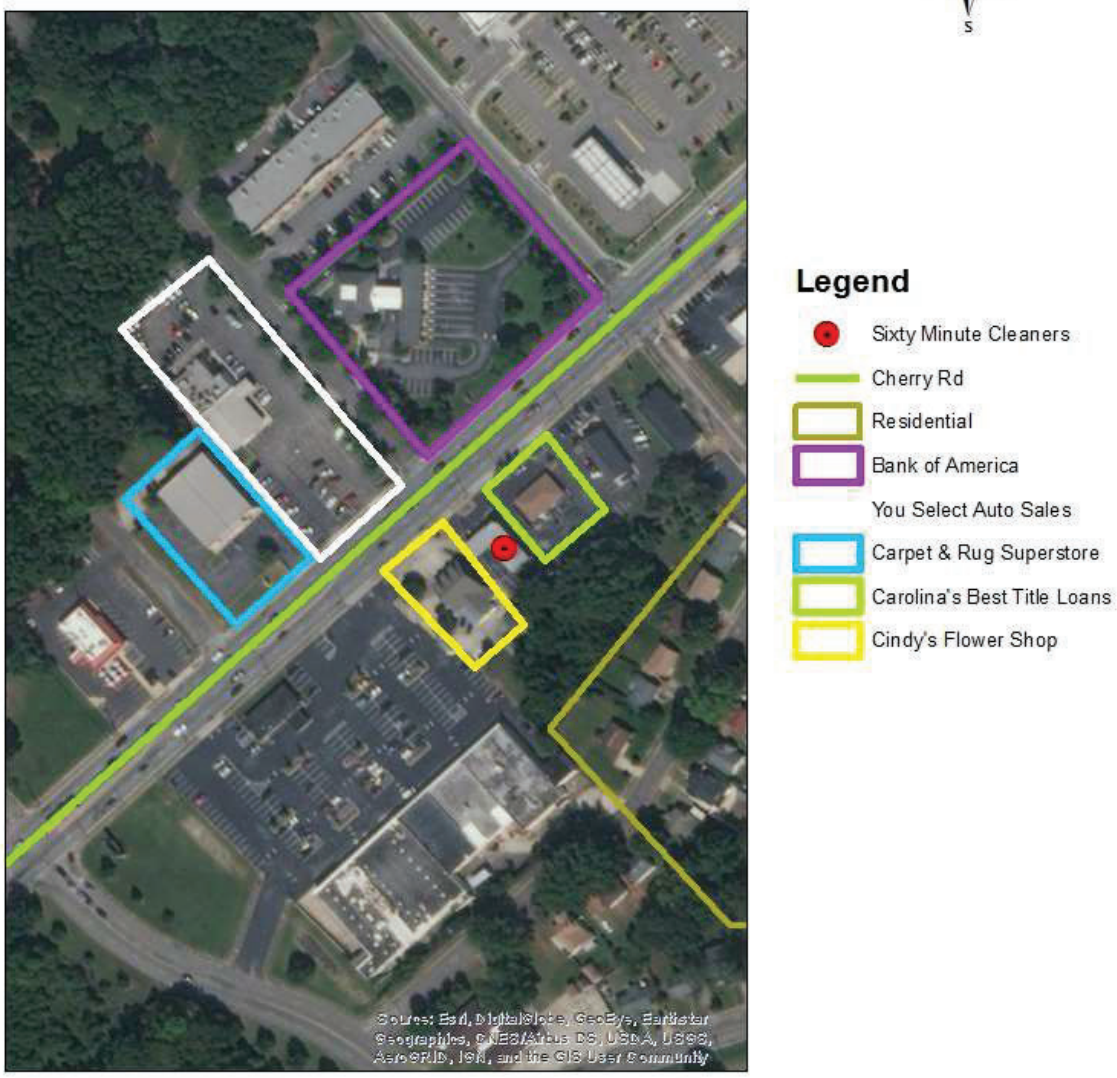
APPENDIX A: MAPS & FIGURES

Figure 1
Site Location Map
Sixty Minute Cleaners
Rock Hill, SC

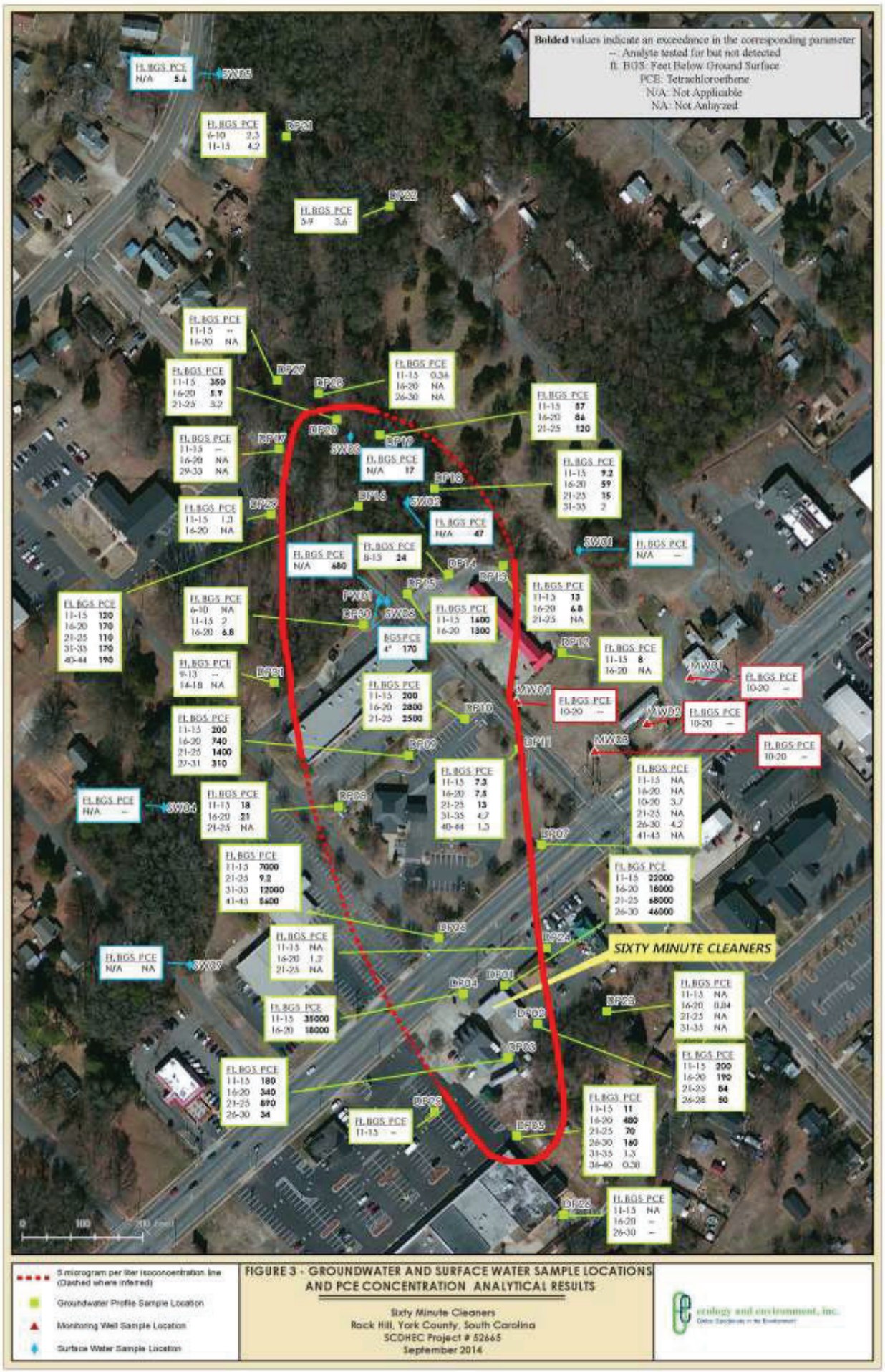


(Reference #15)

Figure 2
Site Vicinity Map
Sixty Minute Cleaners
Rock Hill, SC

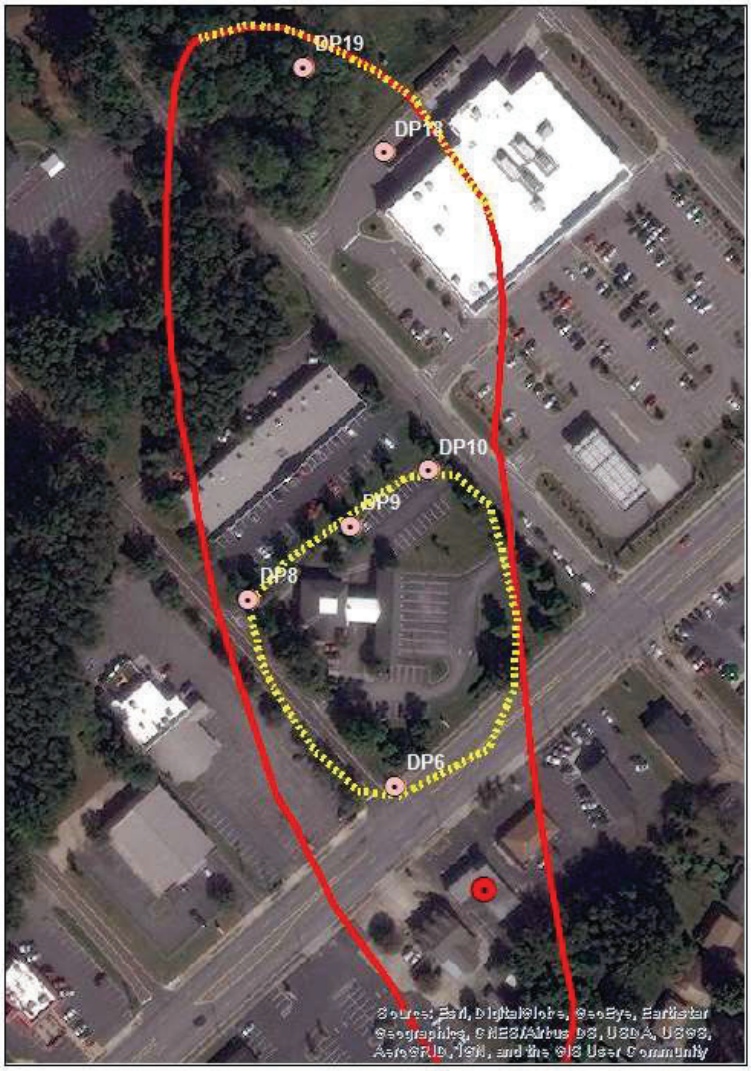


(Reference #15)


Bolded values indicate an exceedance in the corresponding parameter
--: Analyte tested for but not detected
ft. BGS: Feet Below Ground Surface
PCE: Tetrachloroethene
N/A: Not Applicable
NA: Not Analyzed
SIXTY MINUTE CLEANERS
5 microgram per liter isoconcentration line (Dashed where inferred)
Groundwater Profile Sample Location
Monitoring Well Sample Location
Surface Water Sample Location
FIGURE 3 - GROUNDWATER AND SURFACE WATER SAMPLE LOCATIONS AND PCE CONCENTRATION ANALYTICAL RESULTS
Sixty Minute Cleaners
Rock Hill, York County, South Carolina
SCDHEC Project # 52665
September 2014
ecology and environment, inc.

(Reference #7)

Figure 4
Areas of Concern for Additional GW Assesment
Sixty Minute Cleaners
Rock Hill, SC



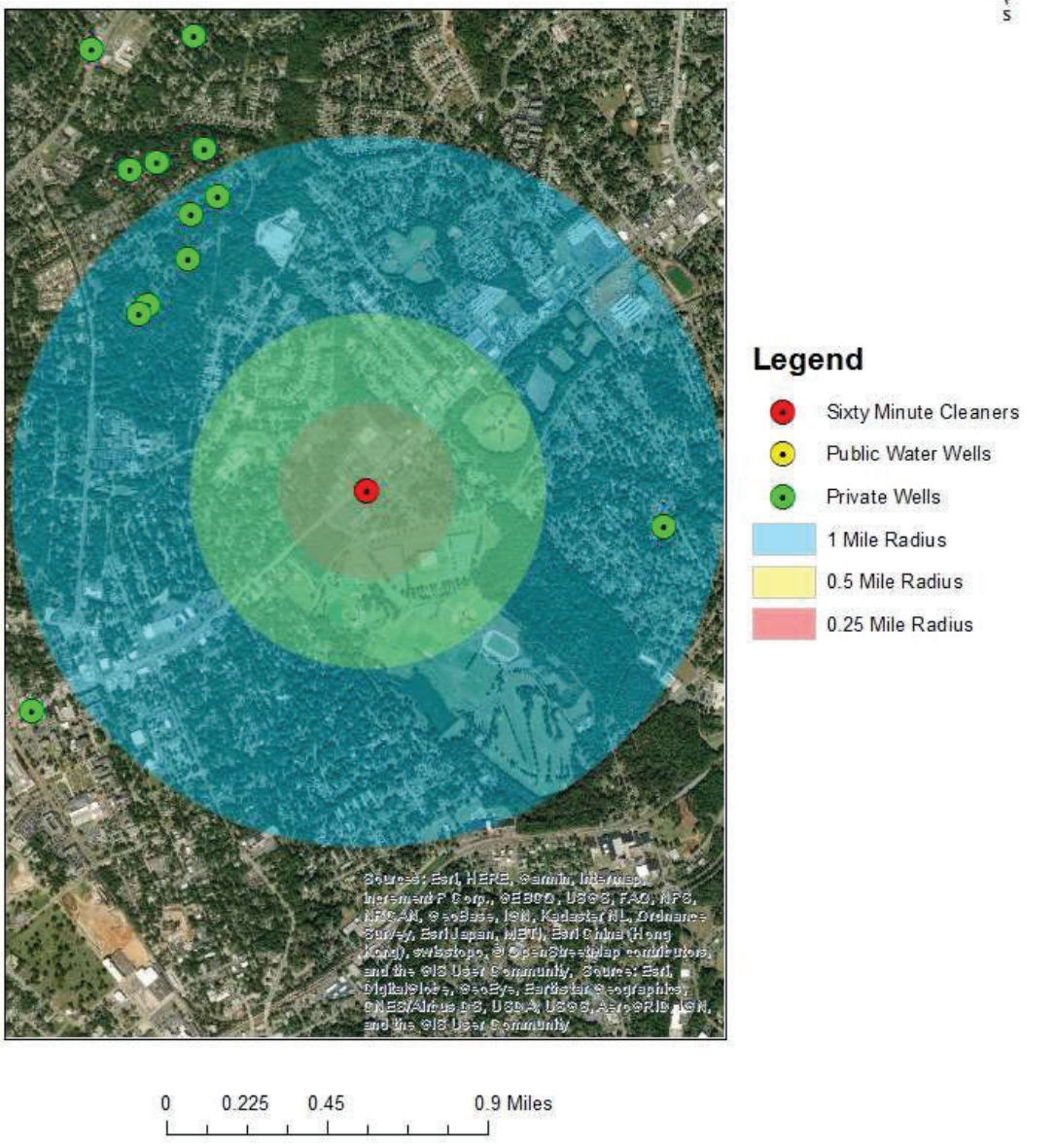
Legend

- Selected MCL Exceedance GW Profiles
- Sixty Minute Cleaners
- Additional Assessment Areas
- GW Plume (Horizontal Boundary)

0 0.0175 0.035 0.07 Miles

(Reference #15)

Figure 5
Nearby Public & Private Water Usage
Sixty Minute Cleaners
Rock Hill, SC

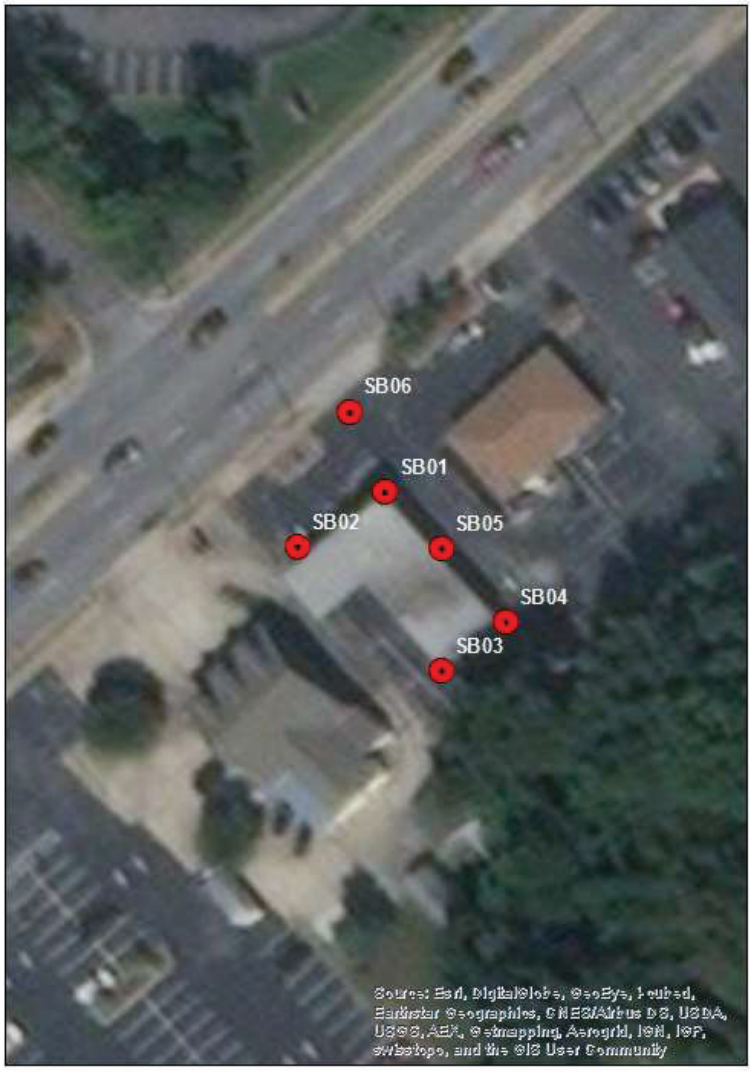


(Reference #15)

Figure 7
Surface Water Pathway Map
Sixty Minute Cleaners
Rock Hill, SC

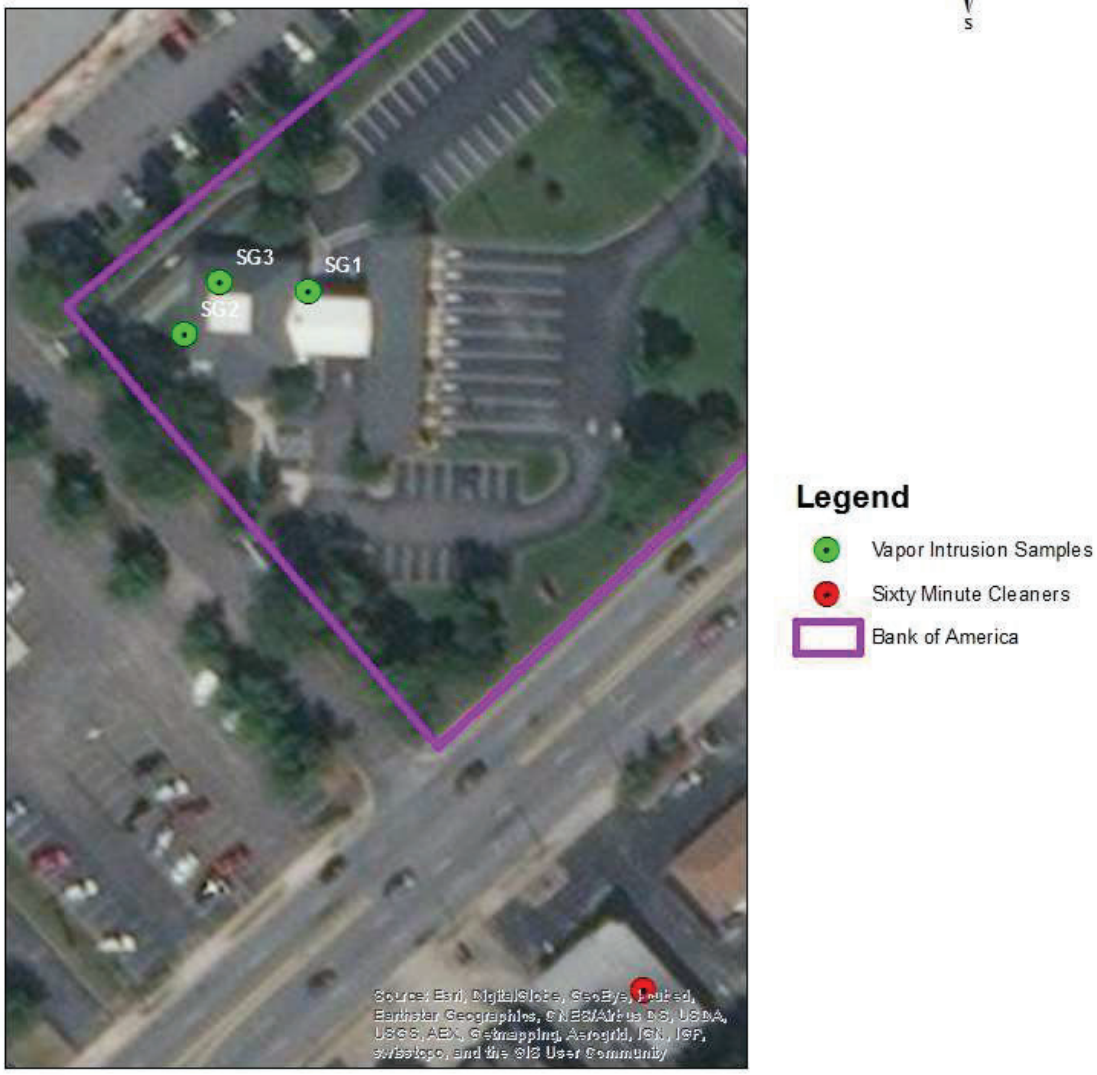
(Reference #15)

Figure 8
Soil Sampling Location Map
Sixty Minute Cleaners
Rock Hill, SC



(Reference #15) (Reference #7)

Figure 9
Vapor Intrusion Sampling Map
Sixty Minute Cleaners
Rock Hill, SC



(Refernce #15) (Reference #7)

APPENDIX B: SITE AND SAMPLE COORDINATE COLLECTION

Site Latitude: 34.950911° N
Site Longitude: -81.017944° W
Feature Description: approximate site center

Collection Date: April 2018

Coordinates collected from www.latlong.net

APPENDIX C: PSA CHECKLIST

Pre-CERCLA Screening Checklist/Decision Form

This form is used in conjunction with a site map and any additional information required by the EPA Region to document completion of a Pre-CERCLA Screening (PCS). The form includes a decision on whether a site should be added to the Superfund program's active site inventory for further investigation. This checklist replaces Attachment A in the December 2016 PCS Guidance document. A current version of the PCS checklist and additional information is available at: https://www.epa.gov/superfund/pre-cercla-screening.

Region: 4 **State/Territory:** SC **Tribe:** SCS 123 457 884 (EPA ID No. (If Available))

Site Name: SIXTY MINUTE CLEANERS

Other Site Name(s): FORMER SIXTY MINUTE CLEANERS

Site Location: (Street)

Congressional District | Rock Hill (City) | SC (State/Terr.) | (County) | 29732 - 2506 (Zip+4) | ☐ (No Zip Available)

If no street address is available: (Township-Range) (Section)

Checklist Preparer:

Benjamin D. Bair / Hydrogeologist (Name / Title) 04/12/2019 (Date)

SCDHEC (Organization) (803) 898-0775 (Phone)

2600 Bull St. (Street) bairbd@dhec.sc.gov e-Mail

Columbia (City) SC (State/Terr.) (County) 29201- (Zip+4)

Site Contact Info/Mailing Address: 1774 Herndon Farm Rd.
Rock Hill, SC 29732

CERCLA 105d Petition for Preliminary Assessment? No **If Yes, Petition Date (mm/dd/yyyy):**

RCRA Subtitle C Site Status: Is site in RCRA Info? No **If Yes, RCRA Info Handler ID #:**

Ownership Type: Private **Additional RCRA Info ID #(s):**

Site Type: Other **State ID #(s):** 52665 / 7433

Site Sub-Type: Dry-Cleaning Operations **Other ID #(s):**

Federal Facility? No **Federal Facility Owner:** (Make selection)

Formerly Used Defense Site (FUDS)? No

Federal Facility Docket? No **If Yes, FF Docket Listing Date (mm/dd/yyyy):**

Federal Facility Docket Reporting Mechanism: (Make selection)

Native American Interest? No **If Yes, list Tribe:**

Additional Tribe (s): (Make Selection)

Additional Tribe (s): (Make Selection)

Site Description

Use this section to briefly describe site background and conditions if known or (easily) available, such as: operational history; physical setting and land use; site surface description, soils, geology and hydrogeology; source and waste characteristics; hazardous substances/contaminants of concern; historical releases, previous investigations and cleanup activities; previous regulatory actions, including permitting and enforcement actions; institutional controls; and community interest.

The former 60 Minute Cleaners began operation in 1963 and conducted business using tetrachloroethene (PCE) as a solvent until 1997. The site is located in a mixed residential and commercial portion of York County. The standalone building is currently occupied by a businesses that repairs and installs auto glass. To the north of the facility building is Cherry Rd followed by standalone businesses including a Carpet and Rug Superstore, Bank of America Financial Center and You Select Auto Sales. Carolina Best Title Loans is located to the east. Private residences are located to the south, and Cindy's Flower shop is located to the west (Figure 2) (Reference #7).

The former 60 Minute Cleaners facility was part of SCDHEC's Drycleaning Facility Restoration Trust Fund (DFRTF) until it was deemed ineligible for the program in May 2016 due to non-payment of fees (Reference #8). Shortly thereafter, the project was transferred to SCDHEC's Federal and State Site Assessment section (Reference #9).

Geospatial Information

Latitude: +34.950911 **Longitude:** --81.017944

Decimal Degree North (e.g., 38.859156) **Decimal Degree West (e.g., 77.036783)**

Provide 4 significant digits at a minimum, more if your collection method generates them.

Except for certain territories in the Pacific Ocean, all sites in U.S. states and territories are located within the northern and western hemispheres and will have a positive latitude sign and negative longitude sign. Coordinate signs displayed above are based on the State/Territory entry on page A-1. Geospatial data tips from the PCS Guidance document are available **here**.

Point Description: Select the option below that best represents the site point for future reference and to distinguish it from any nearby sites. See additional information **here**.

- ☐ Geocoded (address-matched) Site Address
- ☐ Site Entrance (approximate center of curb-cut)
- ☒ Approximate Center of Site
- ☐ Other Distinguishing Site Feature (briefly describe):

Point Collection Method: Check the method used to collect the coordinates above and enter the date of collection. See additional information **here**.

- ☒ Online Map Interpolation
- ☐ GPS (handheld, smartphone, other device or technology with accuracy range < 25 meters)
- ☐ GPS Other (accuracy range is ≥ 25 meters or unspecified)
- ☐ Address Matching: Urban
- ☐ Address Matching: Rural
- ☐ Other Method (briefly describe below):

Collection Date (mm/dd/yyyy): 04/12/2019

POINT-SELECTION CONSIDERATIONS

- Often the best point is a feature associated with the environmental release or that identifies the site visually.
- Use the curb cut of the entrance to the site if there is a clear primary entrance and it is a good identifier for the overall location.
- The approximate center of the site (a guess at the centroid) is useful for large-area sites or where there are no appropriate distinguishing features.
- Use the geocoded address if that is the only or best option available, but if possible use something more representative for sites larger than 50 acres.

Complete this checklist to help determine if a site should be added to the Superfund Active site inventory. See Section 3.6 of the PCS guidance for additional information.	YES	NO	Unknown
1. An initial search for the site in EPA's Superfund active, archive and non-site inventories should be performed prior to starting a PCS. Is this a new site that does not already exist in these site inventories?	☒	☐	☐
2. Is there evidence of an actual release or a potential to release?	☐	☐	☐
3. Are there possible targets that could be impacted by a release of contamination at the site?	☒	☐	☐
4. Is there documentation indicating that a target has been exposed to a hazardous substance released from the site?	☒	☐	☐
5. Is the release of a naturally occurring substance in its unaltered form, or is it altered solely through naturally occurring processes or phenomena, from a location where it is naturally found?	☐	☒	☐
6. Is the release from products which are part of the structure of, and result in exposure within, residential buildings or business or community structures?	☐	☐	☐
7. If there has been a release into a public or private drinking water supply, is it due to deterioration of the system through ordinary use?	☐	☐	☐
8. Are the hazardous substances possibly released at the site, or is the release itself, excluded from being addressed under CERCLA?	☐	☐	☐
9. Is the site being addressed under RCRA corrective action or by the Nuclear Regulatory Commission?	☐	☐	☐
10. Is another federal, state, tribe or local government environmental cleanup program other than site assessment actively involved with the site (e.g., state voluntary cleanup program)?	☐	☒	☐
11. Is there sufficient documentation or evidence that demonstrates there is no likelihood of a significant release that could cause adverse environmental or human health impacts?	☐	☒	☐
12. Are there other site-specific situations or factors that warrant further CERCLA remedial/integrated assessment or response?	☐	☒	☐

Preparer's Recommendation: ☒ **Add** site to the Superfund Active site inventory.

☐ **Do not add** site to the Superfund Active site inventory.

Please explain recommendation below:

PCS Summary and Decision Rationale

Use this section to summarize PCS findings and support the decision to add or not add the site to the Superfund active site inventory for further investigation. Information does not need to be specific but, where known, can include key factors such as source and waste characteristics (e.g., drums, contaminated soil); evidence of release or potential release; threatened targets (e.g., drinking water wells); key sampling results (if available); CERCLA eligibility; involvement of other cleanup programs; and other supporting factors. Attach additional pages as necessary.

The former 60 Minute Cleaners began operation in 1963 and conducted business using tetrachloroethene (PCE) as a solvent until 1997. The site is located in a mixed residential and commercial portion of York County. The standalone building is currently occupied by a businesses that repairs and installs auto glass. To the north of the facility building is Cherry Rd followed by standalone businesses including a Carpet and Rug Superstore, Bank of America Financial Center and You Select Auto Sales. Carolina Best Title Loans is located to the east. Private residences are located to the south, and Cindy's Flower shop is located to the west (Figure 2) (Reference #7).

The former 60 Minute Cleaners facility was part of SCDHEC's Drycleaning Facility Restoration Trust Fund (DFRTF) ⊞

Benjamin D. Bair	State staff/State contractor	04/12/2019
Checklist Preparer Name	Checklist Preparer Organization	Date

EPA Regional Review and Pre-CERCLA Screening Decision

Add site to the Superfund active site inventory for completion of a:

- ☐ Standard/full preliminary assessment (PA)
- ☒ Abbreviated preliminary assessment (APA)
- ☐ Combined preliminary assessment/site inspection (PA/SI)
- ☐ Inegrated removal assessment and preliminary assessment
- ☐ Integrated removal assessment and combined PA/SI
- ☐ Other: _____

Do not add site to the Superfund active site inventory. Site is:

- ☐ Not a valid site or incident
- ☐ Being addressed by EPA's removal program
- ☐ Being addressed by a state cleanup program
- ☐ Being addressed by a tribal cleanup program
- ☐ Being addressed under the Resource Conservation and Recovery Act
- ☐ Being addressed by the Nuclear Regulatory Commission
- ☐ Other: _____

Optional - Print name of EPA Site Assessor making this decision: Jeffrey Crowley

EPA Regional Approval: (Enter Date and then click this box to initiate digital signature stamp)

JEFFERY CROWLEY

Digitally signed by JEFFERY CROWLEY
Date: 2019.05.13 12:45:04 -04'00'

Date

Site Description

(All text as entered on page A-2)

The former 60 Minute Cleaners began operation in 1963 and conducted business using tetrachloroethene (PCE) as a solvent until 1997. The site is located in a mixed residential and commercial portion of York County. The standalone building is currently occupied by a businesses that repairs and installs auto glass. To the north of the facility building is Cherry Rd followed by standalone businesses including a Carpet and Rug Superstore, Bank of America Financial Center and You Select Auto Sales. Carolina Best Title Loans is located to the east. Private residences are located to the south, and Cindy's Flower shop is located to the west (Figure 2) (Reference #7).

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PCS Summary and Decision Rationale

(All text as entered on page A-4)

The former 60 Minute Cleaners began operation in 1963 and conducted business using tetrachloroethene (PCE) as a solvent until 1997. The site is located in a mixed residential and commercial portion of York County. The standalone building is currently occupied by a businesses that repairs and installs auto glass. To the north of the facility building is Cherry Rd followed by standalone businesses including a Carpet and Rug Superstore, Bank of America Financial Center and You Select Auto Sales. Carolina Best Title Loans is located to the east. Private residences are located to the south, and Cindy's Flower shop is located to the west (Figure 2) (Reference #7).

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Chlorinated solvent contamination exceeding MCLs has also impacted the surface water pathway in a nearby intermittent stream. The farthest downstream sample collected in a previous field investigation exceeds MCLs. Potential contamination in the surface water pathway needs to be fully delineated.

Soil gas samples collected within the vapor intrusion pathway presence of chlorinated solvent contamination at the nearby Bank of America building. Data collected showed that soil gas values were below applicable Vapor Intrusion Screening Levels (VISLs), but one of the samples collected was inconclusive due to the fact that it had no vacuum during sample collection. In addition, based on data from the January 2014 field investigation, no soil gas samples were collected in or around the 60 Minute Cleaners building and there are several other structures situated within the footprint of the groundwater plume that may need to be evaluated for potential vapor intrusion contamination as well. The full extent of potential vapor intrusion contamination has not been delineated.

Due to the presence of contamination at the property in the soil and groundwater pathways and extending off-site into the groundwater, surface water, air and soil pathways, the 60 Minute Cleaners site is recommended for placement on CERCLIS.

APPENDIX D : ATTACHED REFERENCES